



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/826,383 | 04/04/2001 | Shigeyoshi Yoshida | 0694-143 | 2904 |

7590 05/28/2004
Hopgood, Calimafde, Judlowe & Mondolino
60 East 42nd Street
New York, NY 10165

EXAMINER

NGUYEN, KHIEM D

ART UNIT PAPER NUMBER

2823

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/826,383

Applicant(s)

SHIGEYOSHI YOSHIDA

Examiner

Khiem D Nguyen

Art Unit

2823

-- **Th MAILING DATE of this communication appears on th cover sheet with the correspondenc address --**
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) 22-28, 32-34 and 39-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21, 29-31 and 35-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other: _____

DETAILED ACTION***Election/Restrictions***

Applicant's election with traverse of claims 1-21, 29-31, and 35-38 in Paper No. 9 is acknowledged. The traversal is on the ground(s) that there is no time frame specified in the Group II claims, so when (the supposed "during the formation of the substrate") in the process the magnetic loss member is introduced is not an element of the method claims. This is not found persuasive because the product as claimed can be made by another and materially different process. In the instant case the product as claimed can be made by another and materially different process, such as introducing the magnetic loss member during the formation of the substrate. Group II claims required uniformly forming a film of the magnetic loss member on the substrate member after removing the insulating film pattern. Thus, there is time frame specified in the Group II claims. Because these inventions are distinct for the reason given above and have acquired a separate status in the art as shown by their different classification.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2823

Claims 1-21, 29-31, and 35-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Awakura et al. (U.S. Patent 6,653,573).

In re claim 1, Awakura discloses a semiconductor bare chip having an integrated circuit formed on front surface thereof, wherein a magnetic loss film (**FIG. 6: 65**) is formed on back surface of the semiconductor bare chip (col. 8, lines 5-36 and **FIGS. 6-7**).

In re claim 2, Awakura discloses wherein the magnetic loss film is a granular magnetic thin film (col. 8, lines 5-24).

In re claim 3, Awakura discloses wherein the granular magnetic thin film is a sputtered film formed by a sputtering method (col. 9, line 48 to col. 10, line 12).

In re claim 4, Awakura disclose wherein the granular magnetic thin film is a vapor-deposited film formed by a vapor deposition method (col. 7, lines 2-22).

In re claim 5, Awakura disclose wherein a magnetic loss film is formed on back surface of the semiconductor wafer (**FIGS. 6-7**).

In re claim 6, Awakura discloses wherein the magnetic loss film is a granular magnetic thin film (**FIG. 6: 65**) (col. 8, lines 5-36).

In re claim 7, Awakura discloses wherein the granular magnetic thin film is a sputtered film formed by a sputtering method (col. 9, line 48 to col. 10, line 12).

In re claim 8, Awakura discloses wherein the granular magnetic thin film is a vapor-deposited film formed by a vapor deposition method (col. 7, lines 2-22).

In re claim 9, Awakura discloses wherein the magnetic loss member (**FIG. 6: 65**) is formed in a prescribed pattern in vicinity of the surface on one side of the

semiconductor substrate; and the magnetic loss member and semiconductor substrate region on the surface are uniformly covered with an insulating film (**FIG. 7: 71**) (col. 9, lines 22-29).

In re claim 10, Awakura discloses wherein the magnetic loss member (**FIG. 6: 65**) is formed over substantially entire surface of the semiconductor substrate (**FIGS. 6-7**).

In re claim 11, Awakura discloses wherein the prescribed pattern is formed by the magnetic loss member and is a striped pattern (**FIGS. 6-7**).

In re claim 12, Awakura discloses wherein the prescribed pattern is formed by the magnetic loss member and is a lattice pattern (**FIGS. 6-7**).

In re claim 13, Awakura discloses wherein the prescribed pattern is formed by the magnetic loss member and is an island pattern (**FIGS. 6-7**).

In re claim 14, Awakura discloses wherein the insulating film comprises at least one material selected from a group consisting of silicon oxide, silicon nitride, and silicon nitride oxide (col. 9, lines 22-29).

In re claim 15, Awakura discloses a semiconductor substrate having a plurality of magnetic loss members (**FIG. 6: 65**) formed in a part thereof, wherein said magnetic loss members are formed in a prescribed pattern, each of the magnetic loss members being formed on an inside surface of each semiconductor device region which is separated by dividing the semiconductor substrate (**FIGS. 6-7**).

In re claim 16, Awakura discloses a semiconductor substrate formed by joining a first semiconductor substrate member and a second semiconductor substrate member

together, and having a magnetic loss member (**FIG. 6: 65**) formed in a part thereof (**FIGS. 6-7**), wherein at least one semiconductor substrate member of the first semiconductor substrate member and the second semiconductor substrate member is provided with a trench, which is formed on the surface thereof that is joined together, and the magnetic loss member is embedded inside said trench (col. 8, lines 5-36 and **FIGS. 6-7**).

In re claim 17, Awakura discloses wherein the trench comprises a plurality of trench portions formed in a prescribed pattern, each of the trench portions being formed on an inside surface of each semiconductor device region which is separated by dividing the semiconductor substrate (col. 8, lines 5-36 and **FIGS. 6-7**).

In re claim 18, Awakura discloses wherein said magnetic loss member is composed of M-X-Y, where M is either any one of, or a mixture of, Fe, Co, and Ni, X is either an element other than M and Y or a mixture thereof, and Y is any one of, or a mixture of, F, N, and O (col. 12, lines 42-58).

In re claim 19, Awakura discloses wherein material of the semiconductor substrate, the first semiconductor substrate member, and the second semiconductor substrate member, respectively, consists of silicon (col. 8, lines 5-36 and **FIGS. 6-7**).

In re claim 20, Awakura discloses wherein material of the semiconductor substrate, the first semiconductor substrate member, and the second semiconductor substrate member, respectively, consists of gallium-arsenic (col. 8, lines 5-36 and **FIGS. 6-7**).

In re claim 21, Awakura discloses a plurality of semiconductor devices that is repeatedly formed in a prescribed pattern on the semiconductor substrate according to claim 9, wherein each of the plurality of semiconductor devices comprises at least one unit region in which the magnetic loss member is formed (col. 8, lines 5-36 and **FIGS. 6-7**).

In re claim 29, Awakura discloses an electromagnetic noise suppression body comprising an electrically conductive soft magnetic thin film; and having a structure, wherein said soft magnetic thin film is finely divided into configuring units sufficiently small relative to wavelength of electromagnetic noise; and conduction of DC current between those configuring units is interrupted (col. 7, line 2 to col. 8, line 36).

In re claim 30, Awakura discloses wherein the soft magnetic thin film has an aspect ratio of 10 or greater (col. 7, line 2 to col. 8, line 36).

In re claim 31, Awakura discloses wherein the soft magnetic thin film is composed of a composition of M-X-Y, where M is either any one of, or a mixture of, Fe, Co, and Ni, X is either an element other than M and Y or a mixture thereof, and Y is any one of, or a mixture of, F, N, and O, and has a granular structure (col. 12, lines 42-58).

In re claim 35, Awakura discloses an electromagnetic noise suppression body for suppressing conductive electromagnetic noise, comprising an electrically conductive soft magnetic thin film attached in vicinity above a microstrip line or signal transmission line similar thereto, wherein the electrically conductive soft magnetic thin film is of a shape having a width that is substantially equivalent to or narrower than line width of the

Art Unit: 2823

microstrip line or signal transmission line similar thereto (col. 10, line 66 to col. 12, line 17).

In re claim 36, Awakura discloses wherein the electromagnetic noise suppression body is attached so that the axis of hard magnetization thereof is substantially parallel to the width direction of the microstrip line or signal transmission line similar thereto (col. 11, line 22 to col. 12, line 17 and **FIG. 11**).

In re claim 37, Awakura discloses wherein the soft magnetic thin film of a shape having a width that is substantially equivalent to or narrower than line width of the microstrip line or analogous signal transmission line has an aspect ratio in width direction of 10 or greater (col. 7, line 2 to col. 8, line 36).

In re claim 38, Awakura discloses wherein the soft magnetic thin film is composed of a composition of M-X-Y, where M is either any one of, or a mixture of, Fe, Co, and Ni, X is either an element other than M and Y or a mixture thereof, and Y is any one of, or a mixture of, F, N, and O, and has a granular structure (col. 12, lines 42-58).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khiem D Nguyen whose telephone number is (571) 272-1865. The examiner can normally be reached on Monday-Friday (8:00 AM - 5:00 PM).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (571) 272-1855. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3432 for After Final communications.

Art Unit: 2823

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

K.N.

May 25, 2004



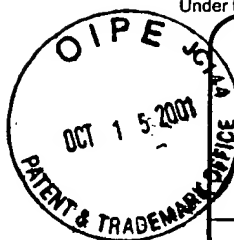
W. DAVID COLEMAN
PRIMARY EXAMINER

$+$

+

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**Complete if Known**

(use as many sheets as necessary)

| | | | |
|-------|---|----|---|
| Sheet | 1 | of | 2 |
|-------|---|----|---|

| | |
|------------------------|--------------------|
| Application Number | 09/826,383 |
| Filing Date | 04/04/2001 |
| First Named Inventor | Shigeyoshi Yoshida |
| Group Art Unit | 2815 2 823 |
| Examiner Name | Khiem NA D. Nguyen |
| Attorney Docket Number | 0694-143 |

[illegible][illegible]

ence considered, whether or not citation is

05/25/04

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:** Assistant Commissioner for Patents, Washington, DC 20231.

+

Approved for use through 10/31/99. OMB 0651-0031

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.



INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

| | | | |
|-------|---|----|---|
| Sheet | 2 | of | 2 |
|-------|---|----|---|

Complete if Known

| | |
|--------------------|------------|
| Application Number | 09/826,383 |
|--------------------|------------|

| | |
|--------------------|------------|
| Filing Date | 04/04/2001 |
|--------------------|------------|

| | |
|----------------------|--------------------|
| First Named Inventor | Shigeyoshi Yoshida |
|----------------------|--------------------|

| | | |
|----------------|-----------------|------|
| Group Art Unit | 2815 | 2813 |
|----------------|-----------------|------|

| | |
|---------------|---|
| Examiner Name | Phiem NA FOR D. Namu |
|---------------|---|

| | |
|------------------------|----------|
| Attorney Docket Number | 0694-143 |
|------------------------|----------|

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

[illegible]

Examiner
Signature

Klausurfragen

Date _____

Considered

05/25/04

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231.

DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

| | | | |
|-----------------------------------|---------------------------------------|--|-------------|
| Notice of References Cited | Application/Control No. 09/826,383 | Applicant(s)/Patent Under Reexamination SHIGEYOSHI YOSHIDA | |
| | Examiner Khiem D Nguyen | Art Unit 2823 | Page 1 of 1 |

U.S. PATENT DOCUMENTS

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Name | Classification |
|---|---|--|-----------------|----------------------|----------------|
| * | A | US-6,653,573 | 11-2003 | Awakura et al. | 174/256 |
| * | B | US-6,719,615 | 04-2004 | Molnar, Charles J. | 451/41 |
| * | C | US-6,515,352 | 02-2003 | Spielberger et al. | 257/659 |
| * | D | US-6,452,253 | 09-2002 | Tuttle, Mark | 257/659 |
| * | E | US-5,639,989 | 06-1997 | Higgins, III, Leo M. | 174/35MS |
| * | F | US-3,963,489 | 06-1976 | Cho, Kon Ho | 430/22 |
| * | G | US-5,698,284 | 12-1997 | Kubota et al. | 428/64.7 |
| | H | US- | | | |
| | I | US- | | | |
| | J | US- | | | |
| | K | US- | | | |
| | L | US- | | | |
| | M | US- | | | |

FOREIGN PATENT DOCUMENTS

| * | | Document Number Country Code-Number-Kind Code | Date MM-YYYY | Country | Name | Classification |
|---|---|--|-----------------|---------|------|----------------|
| | N | | | | | |
| | O | | | | | |
| | P | | | | | |
| | Q | | | | | |
| | R | | | | | |
| | S | | | | | |
| | T | | | | | |

NON-PATENT DOCUMENTS

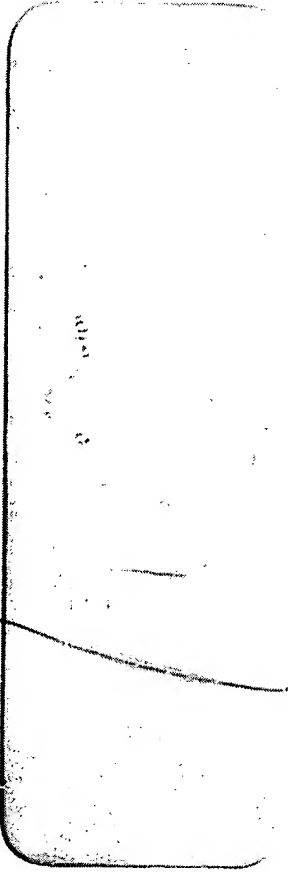
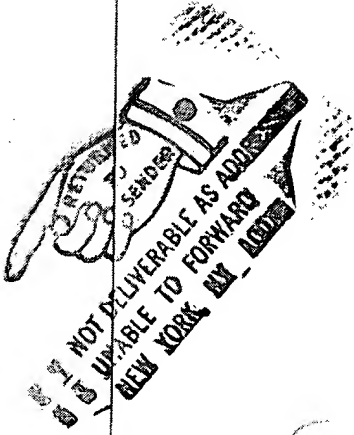
| * | | Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages) |
|---|---|---|
| | U | |
| | V | |
| | W | |
| | X | |

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

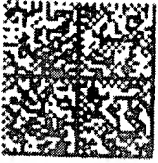
Organization _____ Bldg./Room _____
U. S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
WASHINGTON, DC 20231
IF UNDELIVERABLE RETURN IN TEN DAYS

OFFICIAL BUSINESS

AN EQUAL OPPORTUNITY EMPLOYER



BEST AVAILABLE COPY



JUN 29 2004
TECHNOLOGY CENTER 2800